



UNITED STATES PATENT AND TRADEMARK OFFICE

Cen

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,319	04/18/2006	Mark Thomas Johnson	NL 031253	9393
24737 7590 10/09/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
			EXAMINER THOMAS, BRANDI N	
			ART UNIT 2873	PAPER NUMBER
			MAIL DATE 10/09/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,319	Applicant(s) JOHNSON ET AL.	
	Examiner Brandi N. Thomas	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the

Art Unit: 2873

applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the

Art Unit: 2873

World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8, 10-14, 16, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Gordon, II et al. (6271823 B1).

Regarding claim 1, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display comprising at least one pixel (26) operative to display visible light in a predetermined range (red, green, and blue) of wavelengths (col. 7, lines 37-42), each pixel (26) comprising at least two sub-pixels (14, 16, 18) which each comprise: a color filter (30, 32, and 34) operative to absorb a fixed sub-range (cyan, magenta, yellow) of said predetermined range (red, green, and blue) of wavelengths (col. 7, lines 37-42); an electrophoretic media (12a-12c) comprising two types of particles (10a-10c), each type of particle (10a-10c) being operative to absorb a second and third sub-range (cyan, magenta, yellow, red, green, and blue) of said predetermined range (red, green, and blue) of wavelengths (col. 7, lines 37-42 and 62-67), respectively; and means (8 and 20) for separately controlling the spatial distribution of the respective particles (10a-10c) in said electrophoretic media (12a-12c) between visible and invisible locations (col. 6, lines 39-42); wherein said fixed sub-ranges (cyan, magenta, and

Art Unit: 2873

yellow) of the respective sub-pixels in each pixel (26) are essentially non-overlapping and in combination cover essentially all of said predetermined range of wavelengths (red, green, and blue); and wherein, in each sub-pixel, said second and third sub-ranges (cyan, magenta, and yellow) are different from each other, and cover essentially all of said predetermined range (red, green, and blue) of wavelengths only in combination with the fixed sub-range of the related sub-pixel (col. 7, lines 37-42).

Regarding claim 2, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein the color filter is a color filter element (30, 32, and 34) (col. 7, lines 37-42).

Regarding claim 3, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein the electrophoretic media (12a-12c) comprises the color filter (30, 32, and 34) as a colored fluid (col. 7, lines 47-50).

Regarding claim 4, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said color filters (30, 32, and 34) and said particles (10a-10c) are operative to transmit wavelengths that are not absorbed (col. 7, lines 35-46).

Regarding claim 5, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said predetermined range (red, green, and blue) of wavelengths substantially covers the entire spectrum of visible light (col. 7, lines 37-42).

Regarding claim 6, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein each pixel (26) comprises three sub-pixels (14, 16, and 18) in which the fixed sub-ranges of the filter elements (30, 32, and 34) cover red, green, and blue wavelengths (col. 7, lines 37-42), respectively, such that the respective filter elements (30, 32,

Art Unit: 2873

and 34) are operative to transmit cyan, magenta, and yellow light waves, respectively (col. 7, lines 37-42).

Regarding claim 7, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said particles (10a-10c) are operative to absorb red, green, or blue wavelengths, respectively, and thus to transmit cyan, magenta, or yellow wavelengths (col. 7, lines 37-42).

Regarding claim 8, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said particles are operative to absorb cyan, magenta, or yellow wavelengths, respectively, and thus to transmit red, green or blue, wavelengths (col. 7, lines 37-42 and 62-67 and col. 8, lines 1-5).

Regarding claim 10, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said electrophoretic media (12a-12c) in each sub-pixel is contained in a visible pixel volume, providing for said visible locations, and in two reservoirs (cells 14 and 16, wherein the particles are not seen), each reservoir (14 and 16) providing for invisible locations for particles of respective type (when using black particles the light is absorbed before it reaches the viewers) (col. 7, lines 13-17 and 37-42).

Regarding claim 11, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said means for separately controlling the spatial distribution of the respective particles (10a-10c) comprises data electrodes and reset electrodes (8 and 20) arranged in each reservoir (14 and 16) (figure 1A and 1B).

Regarding claim 12, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said reservoirs (14 and 16) are covered by a black matrix (the

Art Unit: 2873

use of black particles) such that particles residing in the respective reservoir (14 and 16) are made invisible (col. 7, lines 13-17).

Regarding claim 13, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein each sub-pixel comprises a reflector (6a-6c) reflective for light in said predetermined range (red, green, and blue) of wavelengths, such that ambient light transmitted through said color filter element (30, 32, and 34) and through said electrophoretic media (12a-12c) is reflected back and retransmitted through said color filter element (30, 32, and 34) (col. 7, lines 19-25 and 56-59).

Regarding claim 14, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, further comprising a light source (not shown) operative to emit light in said predetermined range (red, green, and blue) of wavelengths through said color filter elements (30, 32, and 34) and through said electrophoretic media (12a-12c) (col. 1, lines 36-39, col. 3, lines 66-67, and col. 4, lines 1-2).

Regarding claim 16, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display, wherein said electrophoretic media (12a-12c) in at least one sub-pixel comprises a third particle type which is operative to absorb essentially the same sub-range of wavelengths as the corresponding color filter element in that sub-pixel (col. 7, lines 37-42).

Regarding claims 18 and 19, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a method for driving a color electrophoretic display, comprising the steps of: resetting each sub-pixel by moving the particles (10a-10c) to their respective reservoir (figures 1A and 1B); receiving pixel image information regarding an image to be displayed; determining a particle

Art Unit: 2873

mixture (12a-12c) corresponding to said image (col. 6, lines 39-42); and filling each pixel volume with color particles (10a-10c) thus forming said particle mixture (12a-12c) (col. 6, lines 39-42).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 15, 17, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon, II et al. (6271823 B1) as applied to claim 1 above, and further in view of Herb et al. (2003/0132908).

Regarding claim 9, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display but does not specifically disclose wherein said two particle types in each sub-pixel have different polarities. Herb et al. discloses wherein said two particle types in each sub-pixel have different polarities (section 0267, lines 1-4). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Gordon, II et al. with the particles of Herb et al. for the purpose of showing the particles mobility (section 0267, lines 1-4).

Regarding claim 15, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display but does not specifically disclose wherein said particles are all chosen from a group consisting of: positively charged particles operative to absorb wavelengths of a first color, negatively charged particles operative to absorb wavelengths of a second color, positively

Art Unit: 2873

charged particles operative to absorb wavelengths of a third color, and negatively charged particles operative to absorb wavelengths of said third color, such that the total number of particle types in the display is four. Herb et al. discloses wherein said particles are all chosen from a group consisting of: positively charged particles operative to absorb wavelengths of a first color, negatively charged particles operative to absorb wavelengths of a second color, positively charged particles operative to absorb wavelengths of a third color, and negatively charged particles operative to absorb wavelengths of said third color, such that the total number of particle types in the display is four (section 0267, lines 1-4 and section 0271, lines 1-3).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Gordon, II et al. with the particles of Herb et al. for the purpose of four-color image pixel (section 0267, lines 1-4 and section 0271, lines 1-3).

Regarding claims 17, 20, and 21, Gordon, II et al. discloses, in figures 2A, 2B, 4A, and 4C, a color electrophoretic display but does not specifically disclose using a ink-jet printing technology for filling said pixels with said electrophoretic media. However, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandi N. Thomas whose telephone number is 571-272-2341. The examiner can normally be reached on Monday - Thursday from 6-4:30.

Art Unit: 2873

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BT

BNT
September 26, 2007

Brandi N Thomas
Examiner
Art Unit 2873


RICKY MACK
SUPERVISORY PATENT EXAMINER